

Claims 1, 8, 31, 41 and 42, under 35 U.S.C. § 103(a), as being obvious in view of the teachings of Tang et al ('365) in view of the teachings of Harvey et al ('360), Kurosawa et al ('647) and Ogura (JP '678),

Claim 9, under 35 U.S.C. § 103(a), as being obvious in view of the teachings of Tang et al ('365) in view of the teachings of Harvey et al ('360), Kurosawa et al ('647), Ogura (JP '678) and the Shimoda et al (SID 99 Digest, "Multicolored Pixel...Printing") article,

Claim 30, under 35 U.S.C. § 103(a), as being obvious in view of the teachings of Tang et al ('365) in view of the teachings of Harvey et al ('360), Kurosawa et al ('647), Ogura (JP '678) and Kobayashi et al ('185),

Claims 2-5, 13, 15, 17, 19, 43-53, 56 and 57, under 35 U.S.C. § 103(a), as being obvious in view of the teachings of Tang et al ('365) in view of the teachings of Harvey et al ('360), Jones et al ('492) and Kurosawa et al ('647),

Claims 34, under 35 U.S.C. § 103(a), as being obvious in view of the teachings of Tang et al ('365) in view of the teachings of Harvey et al ('360), Jones et al ('492), Kurosawa et al ('647) and Nagao (JP '821),

Claims 14, 16, 18, 20 and 54, under 35 U.S.C. § 103(a), as being obvious in view of the teachings of Tang et al ('365) in view of the teachings of Harvey et al ('360), Jones et al ('492), Kurosawa et al ('647) and Shimoda et al. (SID 99 Digest, "Multicolored Pixel...Printing"),

Claims 33, 36, 37, 37[sic 39] and 55, under 35 U.S.C. § 103(a), as being obvious in view of the teachings of Tang et al ('365) in view of the teachings of Harvey et al ('360), Jones et al ('492), Kurosawa et al ('647) and in view of Ogura (JP '678) and Kobayashi et al ('185),

Claims 38 and 40, under 35 U.S.C. § 103(a), as being obvious in view of the teachings of Tang et al ('365) in view of the teachings of Harvey et al ('360), Jones et al ('492), Kurosawa et al ('647) and Poppal et al ('578),

Claims 58, 59, 62-66, 69-71, under 35 U.S.C. § 103(a), as being obvious in view of the teachings of Tang et al ('365) in view of the teachings of Harvey et al ('360), Jones et al ('492), Kurosawa et al ('647), Poppal et al ('578) and Codama et al ('495),

Claims 60 and 67, under 35 U.S.C. § 103(a), as being obvious in view of the teachings of Tang et al ('365) in view of the teachings of Harvey et al ('360), Jones et al ('492), Kurosawa et al ('647), Poppal et al ('578), Codama et al ('495) and Shimoda et al (SID 99 Digest, "Multicolored Pixel...Printing"),

Claims 61 and 68, under 35 U.S.C. § 103(a), as being obvious in view of the teachings of Tang et al ('365) in view of the teachings of Harvey et al ('360), Jones et al ('492), Kurosawa et al ('647), Poppal et al ('578), Codama et al ('495) and Kobayashi et al ('185),

Claims 1-5, 8, 9, 13-20, 30, 31, 33, 34 and 36-71, under the judicially established doctrine of obviousness-type double patenting as being unpatentable over claim 1-24 of USP 6,239,470 (to Yamazaki) in view of the teachings of Tang et al ('365), Harvey et al ('360), Ogura (JP '678), Jones et al ('492), Kurosawa et al ('647), Poppal et al ('578), Codama et al ('495), Nagao (JP '821), Shimoda et al (SID 99 Digest, "Multicolored Pixel...Printing") and Kobayashi et al ('185), and

Claims 1-5, 8, 9, 13-20, 30, 31, 33, 34 and 36-71, under the judicially established doctrine of obviousness-type double patenting as being unpatentable over claim 1-60 of USP 6,441,468 (to Yamazaki) in view of the teachings of Tang et al ('365), Harvey et al ('360), Ogura (JP '678), Jones et al ('492), Kurosawa et al ('647), Poppal et al ('578), Codama et al ('495), Nagao (JP '821), Shimoda et al (SID 99 Digest, "Multicolored Pixel...Printing") and Kobayashi et al ('185)

Each of these rejections are respectfully traversed at least for the reasons provided below.

Initially, it is noted that independent claim 1 recites:

...method for manufacturing an electrical device, said method comprising:

...forming a **first insulating film comprising an organic resin over the thin film transistor;**

forming a second insulating film comprising silicon nitride on the first insulating film;

forming a pixel electrode on the second insulating film, said pixel electrode electrically connected to the thin film transistor;

forming an EL layer over the pixel electrode;

forming a second electrode over the EL layer,

wherein the EL layer is selectively formed through an ink jet method.
(emphasis added)

The Applicants further note that the Examiner asserts in the initial rejection of claims 1, 8, 31, 41, and 42, under § 103(a), that it would have been obvious to one with ordinary skill in the art at the time of the invention to modify the teachings of the Tang et al device by replacing the insulating film (52) with the multilayer insulating layer 16 of Harvey et al ('360) comprising organic resin 17 and silicon nitride 18 (Fig. 3).

However, a detailed review of the Harvey et al ('360) reference reveals that the multilayer 16 composite (comprising polymer film 17 and silicon nitride 18) is deposited on the substrate 11 for the purpose of encapsulating the insulating organic (plastic) substrate in order to stop diffusion of moisture and oxygen through the substrate and subsequent damage to the organic LED 12 array formed on the multilayer 16 (see column 2, lines 44-63; column 4, lines 3-68; column 5, lines 1-9). Further, Harvey et al ('360) teach encapsulating the EL layer 14 and electrode 15 with a multi-layer sealing system 22 comprising an organic film 24, a coefficient matching layer 26 of silicon dioxide and a low permeability layer 28 of silicon nitride.(see column 5, lines 24-67; column 6, lines 1-10) again to stop diffusion of moisture and oxygen and subsequent damage to the organic LED 12 array.

From such a teaching, one of ordinary skill in the prior art is not taught to replace insulating layers 42, 52, or 74 of Tang et al which are positioned beneath the EL layer and electrode, but to instead encapsulate the insulating substrate 41 with a multilayer composite of an organic film and silicon nitride prior to forming the device on the substrate and also to encapsulate, after formation of the completed device with the EL layer 82 and electrode 84, the entire EL display with a multilayer composite of an organic film, silicon oxide and silicon nitride. Note, layers 42, 52 and 74 of Tang et al are employed merely as insulating layers during fabrication of the LED device and no mention is made by Tang et al of such layers being necessary for (or capable of) preventing diffusion of moisture and oxygen and the subsequent damage to the organic LED device. Therefore, the combination of teachings of Tang et al and Harvey et al ('360) would not yield the presently claimed invention and further the proposed combination provides no suggestion or motivation to replace the insulating layers 42, 52 or 74 of Tang et al with the multilayer encapsulation system of Harvey et al ('360).

A review of the Kurosawa et al or Ogura et al references, cited to teach ink jet printing of an EL layer and that silicon nitride layers can be ion barriers, respectively,

reveals that neither reference cures the deficiencies of the proposed combination of Tang et al and Harvey et al ('360) discussed above. Finally, the secondary references to Shimoda and Kobayashi et al et al also do not contain any teaching or suggestion which would remedy the deficiencies of Tang et al and Harvey et al ('360). Therefore, since each feature of the claimed invention is not taught or suggested in the rejections of claims 1, 8, 9, 30, 31, 41 and 42, under § 103(a), those rejections do not establish a *prima facie* case of obviousness and, consequently, are improper and must be withdrawn.

With regard to the rejections of claims 2-5, 13-20, 33, 34, 36-40, 43-57 and 58-71, under 103(a), based upon the combination of teachings of Tang et al, Harvey et al ('360), Jones et al and Kurosawa et al ('647), as well as the teachings of Poppal et al, Codama et al, Shimoda et al (SID 99 Digest, "Multicolored Pixel...Printing"), Nagao et al and Kobayashi et al, the Applicants assert the same arguments regarding the deficiencies of Tang et al and Harvey et al ('360) noted above. To those arguments, the Applicants further assert that the Jones et al reference, cited to teach embedding the EL layers between insulating aluminum oxide insulating layers, also does not remedy the deficiencies of Tang et al and Harvey et al ('360) since there is no teaching or motivation provided by either reference to combine the encapsulating multilayer of Harvey et al ('360) with the aluminum oxide insulating layer of Jones et al.

A review of the secondary references to Nagao et al, Poppal et al and Codama et al, cited to teach particular insulating films having various elements, ink jet printing with an inert gas or nitrogen, and using a protective electrode on top of the EL electrode, respectively, also reveals that none of the references cure the deficiencies of the proposed combination of Tang et al and Harvey et al ('360) discussed above. Therefore, since each feature of the claimed invention is not taught or suggested in the rejections of claims 2-5, 13-20, 33, 34, 36-40, 43-57 and 58-71, under § 103(a), a

prima facie case of obviousness has not been established and, consequently, those rejections are improper and must be withdrawn.

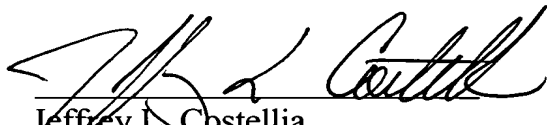
With regard to the rejections of claims 1-5, 8, 9, 13-20, 30, 31, 33, 34 and 36-71 under the double patenting standard, the Applicants note that claims 1-24 of USP 6,239,470 and claims 1-60 of USP 6,441,468 are drawn to article (EL type display) claims exclusively which belong to a completely different statutory category of invention from that of the instant method claims. Therefore, since **only** the teachings of article claims can serve as a basis of prior art, see MPEP Chapter 804(II)(B)(1), and since the Examiner's obviousness-type double patenting (ODP) rejection is **totally lacking** in any sort of analysis under 35 U.S.C. 103, which is also required for any obviousness-type double patenting rejection pursuant to MPEP Chapter 804(II)(B)(1), the Applicants assert that the instant ODP rejections are improperly set forth and not based upon any current case law or procedure of the USPTO. That is, the Examiner has not set forth any rationale or motivation why one of skill in the prior art would have found it to have been obvious to employ the teachings of the secondary references to replace the article claims of either the US 6,239,470 or US 6,441,468 patents with a method of fabricating an EL display device according to the instantly claimed invention. The Applicants are not aware of any US case law, and the Examiner has not presented any US case law, which permits the article claims of a patent or application to render obvious the method claims of another commonly owned application under the judicially established provision of obviousness-type double patenting.

Indeed, it appears that by making the statement that since either US 6,239,470 or US 6,441,468 "teaches an active matrix EL display TT which can be formed by the methods of the claims of the instant invention," the Examiner is attempting to set forth an ODP rejection based upon *In re Schneller*, see MPEP Chapter 804(II)(B)(2), which expressly states that such rejections should "**be rare**" and that such rejections are prohibited without the signature of the Technology Center Director. Since the

Examiner 1) has provided no basis in law for finding obvious the instant method in view of the teachings of article claims of either of commonly owned USP 6,239,470 or USP 6,441,468, 2) has provided no detailed analysis under the guidelines of § 103, and 3) has provided no Director's approval of the apparent *In re Schneller*-type ODP rejection, the obviousness-type double patenting rejections of claims 1-5, 8, 9, 13-20, 30, 31, 33, 34 and 36-71 are improper and must be withdrawn.

Having responded to all rejections set forth in the outstanding Office Action, it is submitted that claims 1-5, 8, 9, 13-20, 30, 31, 33, 34 and 36-71 are again in condition for allowance. An early and favorable Notice of Allowance is respectfully solicited. In the event that the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, the Examiner is courteously requested to contact Applicants' undersigned representative.

Respectfully submitted,



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